

a supply tube having a first end with a notch in the first end and a second end with at least one notch in the second end;

a take-up tube having a first end with a notch in the first end and a second end having an engaging mechanism within the second end of the take-up tube; and

an ink sheet attached at one end to the supply tube and attached at a second end to the take-up tube, wherein the engaging mechanism is an inner surface of the core tube with an appropriate coefficient of friction.--

REMARKS

Claims 15, 17, 19, 20, 23, 25, 27, 58, 60, 62, 71, 73, 75, 80, 81, 83, 85, 111-119 and 127-132 are pending. Claims 15, 17, 20, 23, 25, 58, 60, 71, 73, 80, 81, 83, 111, 117 and 127 are amended; claims 130-132 are added; and claims 16, 18, 24, 26, 59, 61, 72, 74, 82, 84, and 120-126 are canceled without prejudice to or disclaimer of the subject matter found therein.

In paragraph 9, on page 3 of the Office Action, claims 16, 17, 20, 24, 25, 59, 60, 72, 73, 82, 83, 120 and 124-126 were objected to as being dependent upon a rejected base claim but indicated as allowable if rewritten in independent form including all of the features of the base claims and any intervening claims. Applicant greatly appreciates this indication of allowability.

Claim 15 has been amended to include the features of claim 16 and therefore is allowable as are claims 17, 19 and 20 depending therefrom. Claim 23 has been amended to include the features of claim 24 and therefore is allowable as are claims 23, 25 and 27 depending therefrom. Claim 58 has been amended to include the features of claim 59 and thus claim 58 is allowable as are dependent claims 60 and 62. Claim 71 has been amended to include the features of claim 72 and thus claim 71 is allowable as are claims 73 and 75 depending therefrom. Claim 81 has been amended to include the features of 82 and thus claim 81 as well as claims 83 and 85 depending therefrom are in condition for allowance.

Claim 117 has been amended to include the features of claim 120 and thus claim 117 is allowable as are claims 118 and 119 depending therefrom. Further, claims 130-132 correspond to claims 124-126 written in independent form and, thus, they too are allowable. Further, claims 80, 111 and 127 have been amended to include the allowable feature of the protrusion extending inwardly into the interior of the core tube. Thus, it is submitted those claims too are allowable as are claims 112-116 depending from claim 111 and claims 128 and 129 depending from claim 127.

In paragraph 3, on page 2 of the Office Action, claims 15, 19, 23, 26, 58, 61, 62, 71, 74-81, 84, 85, 111-119, 121 and 127-129 were rejected under 35 U.S.C. §102(e) as being anticipated by Ito et al., U.S. Patent No. 6,257,780, and the same claims were rejected under 35 U.S.C. §102(b) as being anticipated by Ito et al., EP 931672. Firstly, claims 76-79 were previously canceled on July 10, 2002. The two references cited are substantially the same reference and both rejections have been rendered moot by the amendments discussed above.

In paragraph 5, on page 3 of the Office Action, claims 15, 19, 23, 26, 58, 61, 62, 71, 74, 75, 81, 84, 85, 111-119, 121 and 127-129 were rejected under 35 U.S.C. §102(b) as being anticipated by Oshima, JP 10-329378; in paragraph 6, same page, claims 15, 18, 19, 23, 26, 27, 58, 61, 62, 71, 74, 75, 81, 84, 85, 117, 122, 123 and 127-129 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Ishii, JP 9-141987; in paragraph 7, same page, claims 15, 19, 23, 26, 58, 61, 62, 71, 74, 75, 81, 84, 85, 111-119, 121 and 127-129 were rejected under 35 U.S.C. §102(b) as being anticipated by Kameyama, U.S. Patent No. 5,897,256; and in paragraph 8, same page, claims 15, 19, 23, 26, 58, 61, 62, 71, 74, 75, 81, 84, 85, 117-119, 121 and 127-129 were rejected under 35 U.S.C. §102(b) as being clearly anticipated by Suzuki et al., U.S. Patent No. 5,100,250. The rejections have all been rendered moot by the amendments discussed above.

In view of the foregoing, reconsideration of the application is requested. It is submitted that the claims as presented herein patentably distinguish over the applied references and fully meet the requirements of 35 U.S.C. §112. Accordingly, allowance of claims 15, 17, 19, 20, 23, 25, 27, 58, 60, 62, 71, 73, 75, 80, 81, 83, 85, 111-119 and 127-132 is respectfully solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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RAM/kap

Attachment:
Appendix

Date: December 30, 2002

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<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>

APPENDIX

Changes to Claims:

Claims 16, 18, 24, 26, 59, 61, 72, 74, 82, 84 and 121-126 are canceled.

Claims 130-132 are added.

The following is a marked-up version of the amended claims 15, 17, 20, 23, 25, 58, 60, 71, 73, 80, 81, 83, 111, 117 and 127:

15. (Amended) An ink sheet cartridge, comprising:

four spools;

a cartridge body that rotatably supports the four spools;

a supply-side core tube having two ends opposite from each other;

a takeup-side core tube having two ends opposite from each other; and

an ink sheet wound around and ~~expanding~~extending between the supply-side core tube and the takeup-side core tube, wherein

the four spools are detachably engaged with the corresponding ends of the supply-side core tube and the takeup-side core tube, and

one of the four spools has an engagement pawl, and one of the supply-side core tube and the takeup-side core tube is provided with an engagement member for ~~engaging~~engaging the engagement pawl, wherein the one of the supply-side core tube and the takeup-side core tube has an inner peripheral surface, and the engagement member has a projection inwardly protruding from the inner peripheral surface.

17. (Amended) The ink sheet cartridge according to claim ~~16~~15, wherein the one of the supply-side core tube and the takeup-side core tube is formed with a receiving hole, and the projection is inserted into and penetrates the receiving hole from an outer side of the one of the supply-side core tube and the takeup-side core tube, and is fixed thereto.

20. (Amended) The ink sheet cartridge according to claim 15, wherein the supply-side core tube and the ~~takeup~~takeup-side core tube are detachable from the corresponding ones of the four spools without detaching the one of the four spools from the cartridge body, and the cartridge body includes a side plate formed with a support hole, and the one of the four spools includes a shaft member and a rotation member engageable with the shaft member, the shaft member including a flange and the rotation member including a resilient protrusion extending ~~from the flange in an axial direction of the flange and urged in a radial direction of the flange and having a tip end opposite from the flange, the rotation member including~~ and a transmission gear, wherein the rotation member engages the shaft member within the support hole while the flange and the transmission gear sandwich the side plate therebetween, and the engagement pawl is provided at the tip end of the resilient protrusion.

23. (Amended) An ink sheet set detachably mountable on an ink sheet cartridge including four spools and a cartridge body rotatably supporting the four spools, one of the four spools having an engagement pawl, the ink sheet set comprising:

a supply-side core tube having two ends opposite from each other;

a takeup-side core tube having two ends opposite from each other; and

an ink sheet wound around and expanding between the supply-side core tube and the takeup-side core tube, wherein

each of the ends of the supply-side core tube and the takeup-side core tube detachably engages a corresponding one of the four spools, and

one of the supply-side core tube and the takeup-side core tube is provided with an engagement member for engaging the engagement pawl, wherein the one of the supply-side core tube and the takeup-side core tube has an inner peripheral surface, and the engagement member has a projection inwardly protruding from the inner peripheral surface.

25. (Amended) The ink sheet set according to claim 2423, wherein the one of the supply-side core tube and the takeup-side core tube is formed with a receiving hole, and the projection is inserted into and penetrates the receiving hole from an outer side of the one of the supply-side core tube and the takeup-side core tube, and is fixed thereto.

58. (Amended) A core tube detachably mountable on an ink sheet cartridge including four spools and a cartridge body rotatably supporting the four spools, one of the four spools having an engagement pawl, the core tube comprising:

a cylindrical body having two ends opposite from each other, one of the two ends detachably engageable with the one of the four spools, wherein the cylindrical body includes an engagement member for engaging the engagement pawl, the cylindrical body has an inner peripheral surface, and the engagement member has a projection inwardly protruding from the inner peripheral surface.

60. (Amended) The core tube according to claim 5958, wherein the cylindrical body is formed with a receiving hole, and the projection is inserted into and penetrates the receiving hole from an outer side of the one of the supply-side core tube and the takeup-side core tube, and is fixed thereto.

71. (Amended) A core tube used in an ink sheet cartridge, comprising:
a cylindrical body having two ends detachably engageable with a specific spool having an engagement pawl, wherein the cylindrical body includes an engagement member for engaging the engagement pawl, the cylindrical body has an inner peripheral surface, and the engagement member has a projection inwardly protruding from the inner peripheral surface.

73. (Amended) The core tube according to claim 7271, wherein the cylindrical body is formed with a receiving hole, and the projection is inserted into and penetrates the receiving hole from an outer side of the cylindrical body and is fixed thereto.

80. (Amended) An ink sheet cartridge, comprising:

a tube-like supply-side member having two ends opposite from each other, a shaft being provided at the two ends respectively;

a tube-like takeup-side member having two ends opposite from each other, a shaft being provided at one end and ~~an engageable member being provided at a protrusion~~ extending from an inner surface near the other end;

a specific spool detachably engageable to the other end of the tube-like takeup-side member, the specific spool having a shaft and an engageable pawl opposite to the shaft, the engageable pawl being engageable with the ~~engageable member~~ protrusion of the tube-like takeup-side member;

a cartridge body that rotatably supports the shafts; and

an ink sheet wound around and expanding between the tube-like supply-side member and the tube-like takeup-side member.

81. (Amended) An ink sheet cartridge, comprising:

a supply-side core tube having two ends opposite from each other;

a takeup-side core tube having two ends opposite from each other;

at least two spools that includes a specific spool having an engagement pawl, each ~~spools~~ spool being detachably engageable with a corresponding core tube respectively;

a cartridge body that rotatably supports the spools; and

an ink sheet wound around and expanding between the supply-side core tube and the takeup-side core tube, wherein one of the supply-side core tube and takeup-side core tube includes an engagement member for engaging the engagement pawl of the specific spool, one of the supply-side core tube and takeup-side core tube has an inner peripheral surface, and the engagement member has a projection inwardly protruding from the inner peripheral surface.

83. (Amended) The ~~core tube~~ink sheet cartridge according to claim ~~82~~81, wherein one of the supply-side core tube and takeup-side core tube is formed with a receiving hole, and the projection is inserted into and penetrates the receiving hole from an outer side of the core tube and is fixed thereto.

85. (Amended) The ~~core tube~~ink sheet cartridge according to claim 81, wherein one of the supply-side core tube and takeup-side core tube has a hollow inside, and the engagement member is formed with an engagement groove for engaging the engagement pawl when the engagement pawl is positioned inside the core tube.

111. (Amended) An ink sheet set, comprising:

a supply core tube having a first end and a second end with at least one notch in each of the first end and the second end;

a take-up core tube having a first end with at least one notch in the first end and a second end having an inner surface defining at least one receiving channel defined by at least one surface associated with the inner surface;

a pair of interchangeable first spools having an inner portion, a flange, and an outer portion, at least one protrusion extending from the flange along the inner portion, the at least one protrusion to engage the at least one notch in the first end of the supply core tube and the take-up core tube;

a second spool having an inner portion, a flange, a shaft portion, a gear and an outer portion, at least one protrusion extending from the flange along the inner portion to engage the at least one notch in the second end of the supply core tube;

a third spool having an inner portion, a flange, a shaft portion, a gear, and an outer portion, the inner portion having at least one engagement member to engage ~~at least one receiving channel~~ the at least one surface of the at least one receiving channel in the inner surface of the second end of the take-up core tube; and

an ink sheet extending from the supply core tube to the take-up core tube.

117. (Amended) An ink ribbon set, comprising:

a supply tube having a first end with a notch in the first end and a second end with at least one notch in the second end;

a take-up tube having a first end with a notch in the first end and a second end having an engaging mechanism within the second end of the take-up tube; and

an ink sheet attached at one end to the supply tube and attached at a second end to the take-up tube, wherein the engaging mechanism is at least one protrusion into the core of the tube.

127. (Amended) An ink sheet ribbon, comprising:

a supply core tube having a first end and a second end with at least one notch in each of the first end and the second end;

a take-up core tube having a first end with at least one notch in the first end and a second end having an inner surface defining at least one ~~receiving channel~~ protrusion extending inwardly; and

an ink sheet extending from the supply core tube to the take-up core tube.